

**REMARKS**

Reconsideration of the present application is respectfully requested.

The applicants acknowledge and appreciate receiving an initialed copy of the form PTO-1449 that accompanied the Supplemental IDS filed on October 28, 2003.

Claims 1 – 7, 9 – 16, 19 – 32 and 42 – 49 are pending. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Claims 1 – 7, 9 – 16, 19 – 32 and 42 – 49 were rejected under 35 USC 103(a) as being unpatentable over Japan 62-004441 ('441) in view of U.S. Patent No. 6,497,848, Deeba et al. ("Deeba") or U.S. Patent No. 5,006,221, Uchikawa et al. ("Uchikawa"). The rejection is respectfully traversed for reasons including the following, which are provided by way of example.

Independent claims 1, 11, 20, 22, 23, and 26, as amended, recite "a ceramic carrier capable of supporting a catalyst component directly on the surface of a ceramic substrate having a crystal lattice", in combination. Support for the amendments can be found in the specification, for example, page 13, lines 3 – 21; and page 14, line 3 to page 15, line 27. Thereby, the pores or defects in the crystal lattice of the ceramic substrate including oxygen defects and lattice defects are effective to directly support the catalyst on the substrate surface, while the crystal lattice is effective to provide a thermally stable ceramic carrier for a catalyst. (E.g., specification page 13, lines 3 – 7.)

The office action admits that '441 fails to teach a trapping component and a defect in the ceramic support. The office action cites Deeba and/or Uchikawa to attempt to remedy the deficiencies of '441. The proposed combination fails to make obvious the invention as claimed. Examples are provided in the following section as to some of the deficiencies that remain in the proposed combination, if made.

The Office Action asserts, for example, that '441 teaches the production of cordierite ceramic honeycomb support for auto exhaust catalyst with the catalyst directly placed on the ceramic support. To the contrary, '441 fails to teach or suggest, for example, "a ceramic substrate having a crystal lattice." (See, e.g., claims 1, 11, 20, 22, 23, and 26.) '441 discloses that the acid treatment is carried out to obtain a large specific surface area necessary to support a catalyst (e.g., page 6, lines 7 – 23). That is, according to '441, since  $\text{HgO}$  and  $\text{Al}_2\text{O}_3$  are selectively eluted from the ceramic carrier upon application of the acid treatment, the surface of the treated ceramic carrier contains only a highly silicate component, i.e., non-crystalline substance ( $\text{SiO}_2$ ).

Moreover, '441 fails to teach or suggest that "the catalyst particles are provided with a layer containing an anti-evaporation metal formed at least in part of an outer surface thereof." (See claims 1 and 11.) The anti-evaporation metal is effective to improve the resistance of the catalyst against evaporation (see page 20, lines 8 – 21). To the contrary, according to '441, the heat treatment is carried out at 600 to 1000°C after completion of the acid treatment, although '441 is silent concerning prevention of the possible evaporation of the catalyst during the heat treatment at a higher temperature.

The office action asserts that Deeba teaches the use of a catalyst trap. However, the catalyst trap of Deeba fails to teach or suggest a "trapping component which adsorbs a catalyst

poisoning component included in the gas to be purified” or that the trap layer is provided “to trap a catalyst poisoning component included in the gas to be purified” (e.g., claim 20, 23, 26). To the contrary, according to Deeba, the catalyst trap is used to trap NO<sub>x</sub> which is the target contaminant in the exhaust stream. (E.g., Col. 9, lines 3 – 8.) In operation, the trap layer of the present invention as claimed can be used to trap a catalyst poisoning component such as sulfur (S).

Moreover, Deeba fails to teach or suggest the user of a layer containing the anti-evaporation metal. (See claims 1 and 11.)

The office action asserts that Uchikawa teaches a protecting layer, and the presence of noble metal catalysts, the presence of a lattice effect, and the specific teachings of the catalytic effects. To the contrary, Uchikawa teaches only reduction of nitrogen oxide (NO<sub>x</sub>) with rhodium (Rh).

Moreover, Uchikawa teaches that calcia (CaO) or yttria (Y<sub>2</sub>O<sub>3</sub>) is added to zirconia (ZrO<sub>2</sub>) and the mixture is heated, so that CaO or Y<sub>2</sub>O<sub>3</sub> are included in the crystal and a lattice defect of the oxygen ion is formed. Including CaO or Y<sub>2</sub>O<sub>3</sub> in a mixture of ZrO<sub>2</sub> does not teach or suggest that elements are “substituted”, e.g., substitution of Zr in the ZrO<sub>2</sub> with Ca or Y, thereby forming the lattice defects. That is, Uchikawa does not teach or suggest the formation of lattice defects through the substitution of ceramic atoms. (E.g., claims 1, 23.)

‘441, Deeba and/or Uchikawa fail to teach or suggest, for example, these elements recited in independent claims 1, 11, 20, 22, 23, and 26. It is respectfully submitted therefore that claims 1, 11, 20, 22, 23, and 26 are patentable over ‘441.

For at least these reasons, the combination of features recited in independent claims 1, 11, 20, 22, 23, and 26, when interpreted as a whole, is submitted to patentably distinguish over the

prior art. In addition, '441, Deeba and/or Uchikawa clearly fail to show other claimed features as well.

Claims 1 – 7, 9 – 16, 19 – 32 and 42 – 49 were provisionally rejected under 35 USC 103(a) as being obvious over co-pending U.S. application Ser. No. 09/546,227 (“‘227”). The rejection is traversed for reasons including the following, which are provided by way of example.

The office action admits that ‘227 fails to teach or suggest some details of the claims, such as amounts of elements and sizes of the features. However, the examiner argues that the missing features would be obvious expedients left to the practitioner constructing a catalyst for the claimed utility.

Nevertheless, use of a layer containing an anti-evaporation metal (e.g., claims 1, 11), a catalyst that decomposes through reaction with a catalyst poisoning component (e.g., claim 22), use of a trapping component (e.g., claim 20) or a trap layer capable of trapping a catalyst poisoning component (e.g., claim 23, 26) is neither taught nor suggested in ‘227. In addition, because ‘227 fails to recognize the effects obtained from such a component or layer, there is no motivation to modify ‘227 as proposed in the office action.

Accordingly, it is respectfully submitted that the claims are patentable over ‘227. Reconsideration and withdrawal of the provisional rejection are respectfully requested.

Claims 1 – 7, 9 – 16, 19 – 32 and 42 – 49 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 103 of co-pending U.S. application Ser. No. 09/546,227 (“‘227”). The rejection is traversed for reasons including the following, which are provided by way of example.

Any obviousness-type double patenting rejection must make clear:

(A) The differences between the inventions defined by the conflicting claims - a claim in the cited application compared to a claim in the present application; and

(B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the cited patent application.

Unless a claimed invention in the application is obvious over a claimed invention in the patent, no double patenting rejection of the obvious-type should be made.

The office action states that the claims “overlap in scope of subject matter claimed.” Accordingly, the double patent rejection is procedurally deficient because it fails to make clear the differences between the inventions of the respective claims. The examiner is respectfully requested to clarify which recitations of claims 1 – 103 in the cited application are different from the recitations in the claims of the present application.

Furthermore, the office action fails to state why any particular limitations in the present claims would have been an obvious variation over the ‘227 patent application.

The office action has completely failed to make a prima facie case of obviousness with respect to the ‘227 patent application. Accordingly, it is respectfully requested that the examiner reconsider and withdraw the obviousness-type double patenting rejection.

With respect to the rejected dependent claims, applicant respectfully submits that these claims are allowable not only by virtue of their dependency from independent claims 1, 11, 23, or 26, but also because of additional features they recite in combination.

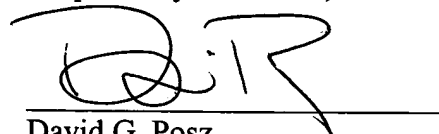
The applicants respectfully submit that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. The applicants do not concede that the cited prior art shows any of the elements recited in the claims. However, the applicants have provided specific examples of elements in the claims that are clearly not present in the cited prior art.

The applicants strongly emphasize that one reviewing the prosecution history should not interpret any of the examples applicant has described herein in connection with distinguishing over the prior art as limiting to those specific features in isolation. Rather, for the sake of simplicity, the applicants have provided examples of why the claims described above are distinguishable over the cited prior art.

In view of the forgoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'D. G. Posz', written over a horizontal line.

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